

In the Claims:

1-111. cancelled

112. (currently amended) A method of modifying or detecting a polynucleotide, said method comprising:

(a) providing in combination:

i) a first oligonucleotide or a molar excess of said first oligonucleotide relative to the concentration of said polynucleotide, with said first oligonucleotide having a 3' portion capable of reversibly hybridizing to said polynucleotide and a 5' portion which does not hybridize to said polynucleotide, and

ii) a 5'-nuclease, and

(b) reversibly hybridizing under isothermal conditions said

polynucleotide and said first oligonucleotide, wherein said first oligonucleotide, when hybridized to said polynucleotide, is cleaved by said 5'-nuclease as a result of the presence of said polynucleotide to provide: (i) a first fragment that is substantially non-hybridizable to said polynucleotide, or a first fragment including said 5' portion and no more than one nucleotide from the 5' end of said 3' portion, and (ii) a second fragment that is 3' of said first fragment with reference to said first oligonucleotide and is substantially hybridizable to said polynucleotide, thereby modifying or detecting said polynucleotide.

113. (previously presented) The method of Claim 112, further providing a second oligonucleotide that hybridizes to a site on said polynucleotide that is 3' of the site at which said first oligonucleotide hybridizes.

114. (previously presented) The method of Claim 112, further comprising step (c) detecting the presence of said first fragment, said second fragment, or said first and second fragments, the presence thereof indicating the presence of said polynucleotide.

115. (previously presented) The method of Claim 112, wherein said polynucleotide is from a source selected from the group consisting of viruses, bacteria, fungi, mycoplasma, and protozoan.

116. (previously presented) The method of Claim 113, wherein the oligonucleotide hybridization sites of said first oligonucleotide and said second oligonucleotide are contiguous.

117. (previously presented) The method of Claim 112, wherein at least one of said first fragment and said second fragment has a label.